

a heat transfer medium interposed between the sub-surface and said focus ring, said heat transfer medium being so disposed as to improve thermal conductivity between the sub-surface and said focus ring to be higher than in a case with no thermal transfer medium, said heat transfer medium consisting essentially of a conductive material; and

a clamp configured to press said focus ring against the sub-surface,

wherein said cooling mechanism maintains said target substrate and the focus ring at substantially the same temperature.

3. (Amended) The device according to claim 1, wherein said heat transfer medium consists essentially of a heat-resistant elastic member selected from the group consisting of conductive silicone rubber and conductive fluororubber.

4. (Amended) The device according to claim 1, wherein said heat transfer medium is adhered to the sub-surface with a heat transfer adhesive.

5. (Amended) The device according to claim 21, wherein said heat transfer medium consists essentially of a heat transfer medium gas, and said apparatus further comprises a gas passage, formed in said worktable, in order to supply the heat transfer medium gas between the sub-surface and said focus ring.

6. (Twice Amended) The device according to claim 5, wherein said heat transfer medium consists essentially of an inert gas or a gas containing part of a composition of a process gas to be supplied around said worktable.

12. (Amended) A worktable device for a semiconductor process, comprising:
a worktable having a main surface for supporting a target substrate and a sub-surface disposed around said main surface;
a cooling mechanism disposed in said worktable and configured to supply cold to the main surface and the sub-surface;

a focus ring placed on the sub-surface and configured to surround the target substrate on the main surface;

a heat transfer medium interposed between the sub-surface and said focus ring, said heat transfer medium being so disposed as to improve thermal conductivity between the sub-surface and said focus ring to be higher than in a case with no thermal transfer medium;

a clamp configured to press said focus ring against the sub-surface;

a clamp frame having a contact portion which comes into contact with said focus ring from above, and an extending portion extending downward from the contact portion along a side portion of said worktable; and

an outer cover substantially made of heat-resistant synthetic resin and configured to cover said clamp frame,

wherein said cooling mechanism maintains said target substrate and the focus ring at substantially the same temperature.

14. (Twice Amended) A plasma processing apparatus for a semiconductor process, comprising:

a hermetic process chamber;

a supply system configured to supply a process gas into said process chamber;

an exhaust system configured to vacuum-evacuate an interior of said process chamber;

an excitation mechanism configured to excite and plasmatize the process gas;

a worktable disposed in said process chamber and having a main surface for supporting a target substrate and a sub-surface disposed around the main surface;

a cooling mechanism disposed in said worktable and configured to supply cold to the main surface and the sub-surface;

a focus ring placed on the sub-surface and configured to surround the target substrate on the main surface, said focus ring consisting essentially of a conductive material;

a heat transfer medium interposed between the sub-surface and said focus ring, said heat transfer medium being disposed so as to improve thermal conductivity between the sub-surface and said focus ring to be higher than in a case with no thermal transfer medium, said heat transfer medium consisting essentially of a conductive material; and

a clamp configured to press said focus ring against the sub-surface,

wherein said cooling mechanism maintains said target substrate and the focus ring at substantially the same temperature.

17. (Amended) The apparatus according to claim 12, wherein said heat transfer medium consists essentially of a heat transfer medium gas, and said apparatus further comprises a gas passage, formed in said worktable, in order to supply the heat transfer medium gas between the sub-surface and the focus ring.

21. (Amended) A worktable device for a semiconductor process, comprising:

a worktable having a main surface for supporting a target substrate and a sub-surface disposed around said main surface;

a cooling mechanism disposed in said worktable and configured to supply cold to the main surface and the sub-surface;

a focus ring placed on the sub-surface and configured to surround the target substrate on the main surface;

a heat transfer medium interposed between the sub-surface and said focus ring, said heat transfer medium being so disposed as to improve thermal conductivity between the sub-surface and said focus ring to be higher than in a case with no thermal transfer medium; and

a clamp configured to press said focus ring against the sub-surface,